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Prediction of a quantum anomalous Hall state in Co-decorated silicene. THANESHWOR KALONI, GEORG SCHRECKENBACH, University of Manitoba, MICHAEL FREUND, FTI — Based on first-principles calculations, we demonstrate that Co-decorated silicene can host a quantum anomalous Hall state. The exchange field induced by the Co atoms combined with the strong spin-orbit coupling of the silicene opens a nontrivial band gap at the K point. As compared to other transition metals, Co-decorated silicene is unique in this respect, since usually hybridization and spin-polarization induced in the silicene suppress a quantum anomalous Hall state.

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